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A.D. 1915

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COMPLETE SPECIFICATION.

Improvements in or relating to Certain Metallic Parts of Saddles for Horses, and to the Mode of and Means for Manufacturing the same.

We, JOHN BARKER, of Wednesfield Road, Willenhall, Manufacturer, and THOMAS PHILLIPS, of 13, Graiseley Lane, Wednesfield, Tool Maker, do hereby declare the nature of this invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention comprises certain improvements in or relating to certain metallic parts of saddles for horses, and to the mode of and means for manufacturing the same, and it relates particularly to the metallic part or member of a saddle for horses which is in the nature of an arched member disposed in front of the saddle, and which arched member is of composite or laminated formation composed of a plurality of strips or plates suitably secured together.

According to the present invention, the strips or plates are aggregated together when in, or substantially in, the straight form, and are afterwards collectively bent or formed to the form of the arched member.

The arch member may be furnished with a loop or perforated flange, and, according to the present invention, this loop or perforated flange may be integral with one of the plates or strips constituting the arch, and may be formed in the manufacture of such plate or strip by the stamping operation employed in manufacturing the plate or strip itself.

A hook or the like may be provided upon the arch, and may be integral with one of the plates or strips forming the arch; this hook or the like may be manufactured integrally with the plate or strip by first making a drop forging, and afterwards working parts of the forging into tongues which collectively form the strip, as hereinafter more particularly described.

Conveniently there are three plates or strips employed in the arch; the upper plate or strip, which is the shortest, being furnished with the hook or the like, the second plate or strip, which is the intermediate one, being longer, and being furnished with the loop or perforated projecting flange, and the third being disposed lowermost, and being the longest of the three, such third strip conveniently having its end parts cranked.

In bending the aggregated strips to the form of the arch, it is necessary that the arch portion of the article produced should be inclined in relation to the plane of the arch, that is to say, in section at a mid-point in the article the strips are not disposed at right angles to the plane of the arch, but are disposed at a small angle to a line at right angles to the plane of the arch. In order to provide for the bending of the aggregated parts to this desired formation, we employ tools to be hereinafter more particularly described, and which tools permit of the desired bending of the blank to the arch formation, from the blank,

[Price 6d.]



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which may be straight both in plan and elevation, the incline being thereby imparted to the arch in the operation of forming the arch itself.

In order that this invention may be clearly understood and readily carried into practice, reference may be had to the appended explanatory sheet of drawings, upon which:—

Figure 1 is a perspective view of one form of article, for the manufacture of which the present invention provides.

Figure 2 is a perspective view of the member shown in Figure 1 in a partly made form.

Figure 3 illustrates a stage in the process of manufacture of one of the parts forming the member shown in Figure 2.

Figure 4 illustrates a later stage in the manufacture of the part shown in Figure 3.

Figure 5 is a perspective view of one form of bottom tool which may be employed in arching a blank such as shown in Figure 2.

Figure 6 is a side elevation of one form of upper tool which may be employed in conjunction with the lower tool shown in Figure 5, and in connection with Figure 6 a sectional side elevation of the blank is illustrated.

In a convenient embodiment of the present invention, a strip or member *a* is manufactured to the form shown in Figure 2; and may be cranked at its extremities as shown. A strip or member *b* is also separately manufactured, this member *b* having a rearwardly projecting flange *c* furnished with an elongated perforation *d*, the flange *c* and perforation *d* being formed in the process of stamping the member *b* from sheet or strip metal. The member *e* having the hook *f* is also separately manufactured. This member *e* may be manufactured by first making a drop forging of the form shown in Figure 3; this is then heated; the hook *f* is turned through an angle of 90° and the lugs *g, g* are hammered or formed to the shape shown in Figure 4. After the parts *a, b, e* have thus been separately manufactured, they are each separately punched with two holes at *h, h*, and the parts are rivetted together through these two holes *h, h*. After the parts have been so rivetted together, two further holes are drilled at *i, i* through the three parts collectively. Rivets are then inserted at these points *i, i*.

The member shown in Figure 2 is then inverted and placed in a lower tool such as shown in Figure 5. This tool essentially involves a curved groove *k* into which the rivetted composite blank is forced by the part *i*¹ of the top tool shown in Figure 6. The bottom of this groove *k*¹ and the under surface of the die *i*¹ are placed at an incline in order that in the operation of bending the blank the latter may at its arched part, and throughout any suitable portion of its length, receive an inclined formation, such as is shown in the section of the blank in Figure 6. The side walls of the groove *k*¹ preserve the plane of the arch during this arching operation, and during the inclining of the arch portion of the blank. *k* in Figure 5 is a recess to accommodate the hook *f*, and *l* a recess to accommodate the member *c*.

It will be noted that the tool shown in Figure 5 is of a form which only operates upon the central part of the blank, and after being subjected to the tool shown in Figure 5, it may be necessary to subject the blank to a further blow to slightly displace the end parts of the blank into their correct positions. However, instead of employing a tool of the form shown in Figure 5, a tool may be employed which is centrally the same as that shown in Figure 5, but which is extended on both sides to the form of the arms of the arch, and the top tool may be correspondingly enlarged so that the entire or substantially the entire length of the blank is operated upon, and the arms of the arch member are pressed to their correct formation in the one operation of arching the blank.

Other perforations necessary in the finished article may be punched and/or drilled at any suitable stage in the process of manufacture.

The invention is applicable to riding saddles, harness saddles and pack saddles.

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Having now particularly described and ascertained the nature of our said invention, and in what manner the same is to be performed, we declare that what we claim is:—

1. The manufacture of a metallic part or member of a saddle for horses, which
5 is in the nature of an arched member of composite or laminated formation, composed of a plurality of strips or plates, according to which the strips or plates are aggregated together when in, or substantially in the straight form, and are afterwards collectively bent to form the arch member.
2. The manufacture of a metallic part or member of a saddle for horses,
0 which is in the nature of an arched member, according to which from a blank which is straight in plan, an arched member is formed, in which the arched portion, or a part of the arched portion, is inclined in relation to the plane of the arch.
3. Means for manufacturing an arched member as claimed in the last pre-
5 ceding claim, comprising or involving a tool furnished with a groove in which the arch member is bent, the base of such groove being arranged at a transverse incline; the side wall or walls of such groove being adapted to position the arch member during the press operation.
4. The manufacture of an arch member for a saddle, composed of three plates
0 or strips which are rivetted or aggregated together when in or substantially in the straight, one of the said strips or plates being furnished with a hook or the like manufactured integrally with the plate, and another with a loop or perforated flange, the latter being formed in the stamping operation employed in manufacturing the plate or strip itself, and which aggregated strips or plates
5 are collectively bent or pressed to the arch form in a manner whereby the arched portion, or a part of the arched portion, is inclined in relation to the plane of the arch, substantially as set forth.
5. The manufacture of a plate or strip having a hook or the like and constituting a metallic part or member of a saddle for horses, according to which
0 the hook or the like is manufactured integrally with the plate or strip by first making a drop forging and afterwards working parts of the forging into tongues which collectively form the strip.
6. The manufacture of an arch member for/of a saddle for horses, substantially as herein set forth.
7. Means for manufacturing an arch member for/of saddles for horses, sub-
5 stantially as herein set forth.
8. An arch member for/of saddles for horses, manufactured substantially as herein set forth.

Dated this 12th day of July, 1915.

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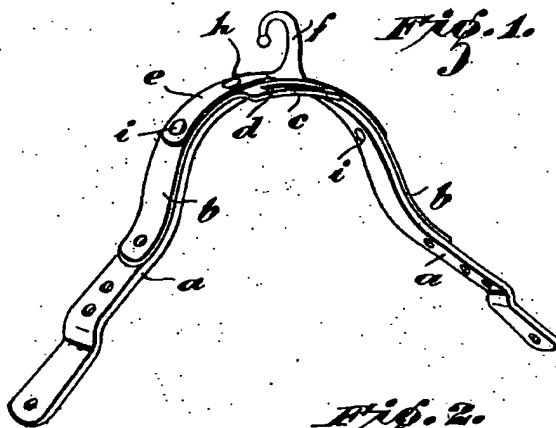


Fig. 2.

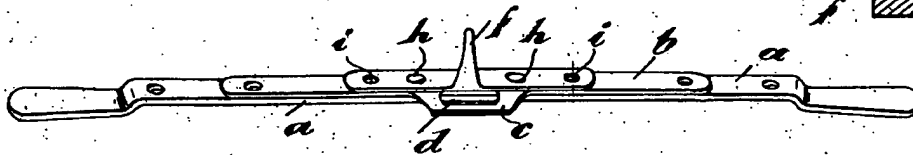


Fig. 3.



Fig. 4.

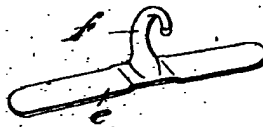


Fig. 6.

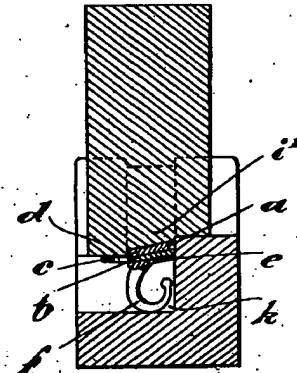
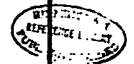
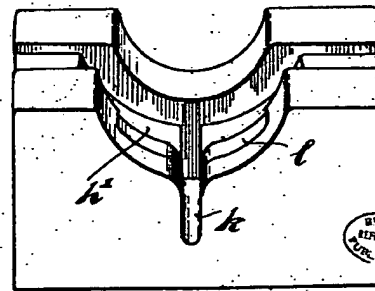
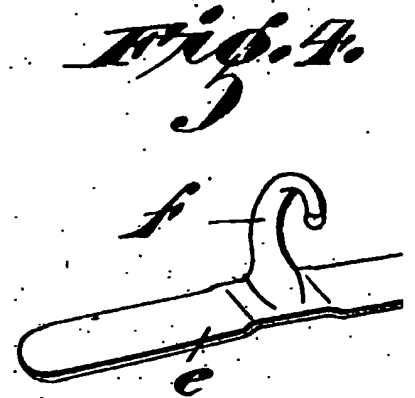
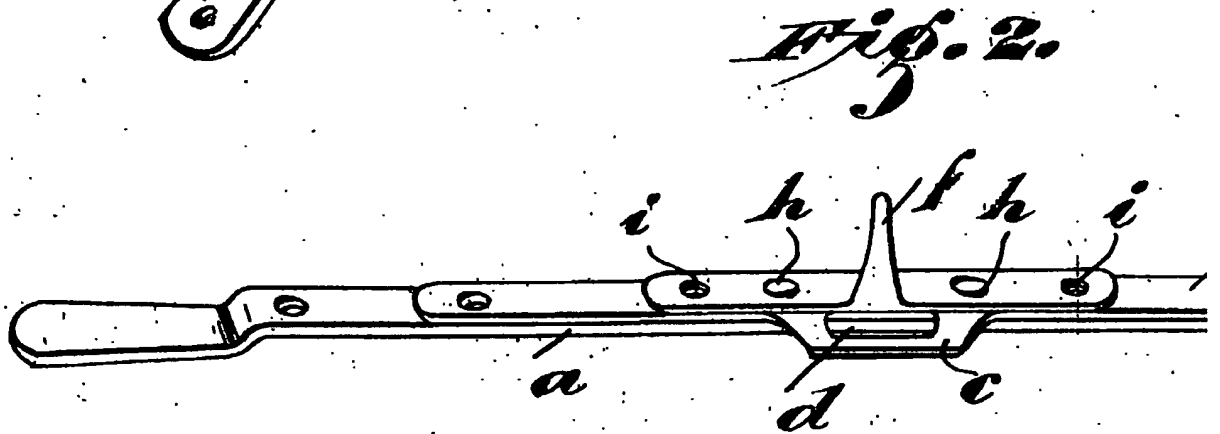
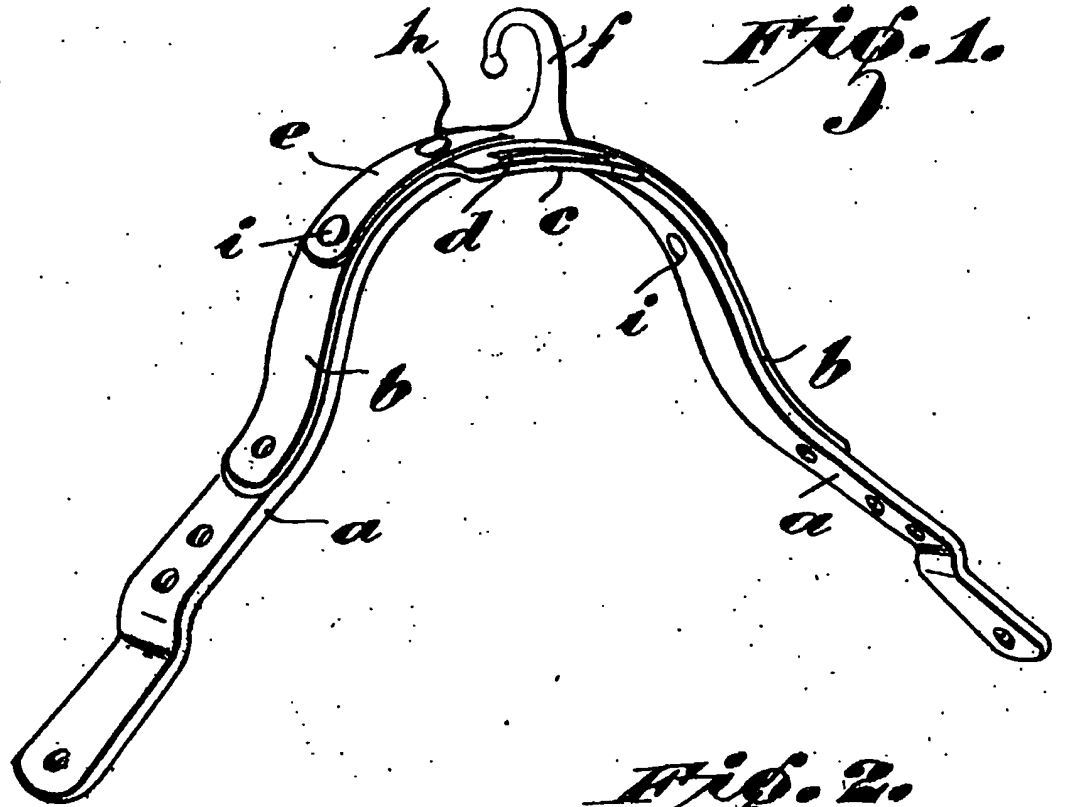


Fig. 5.



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Fig. 6.

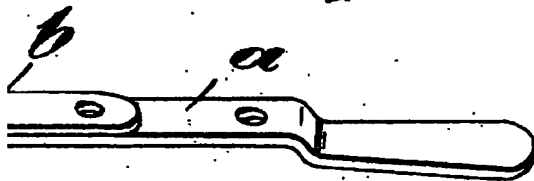
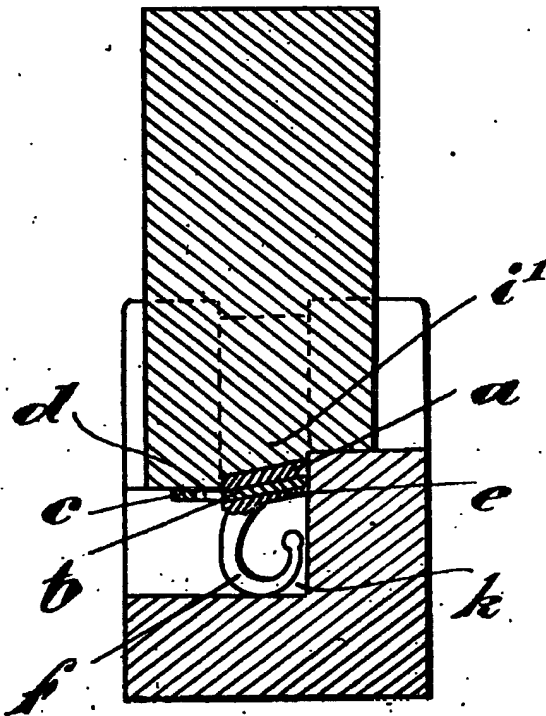
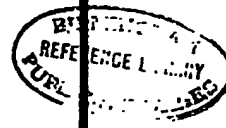
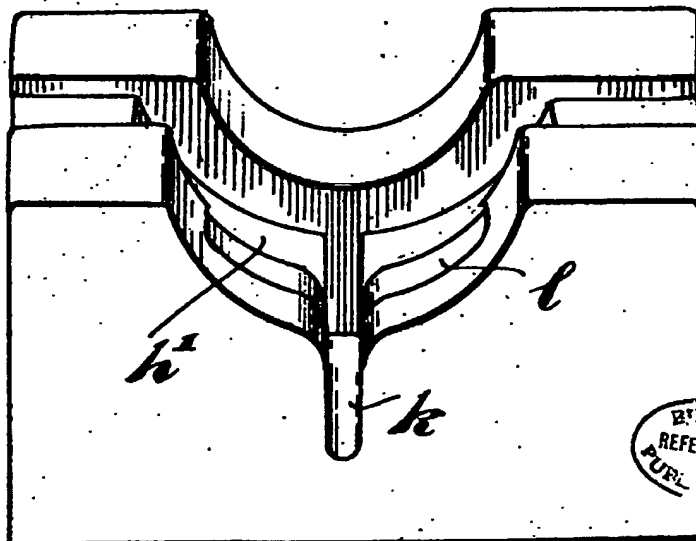


Fig. 5.



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